

## What is claimed is:

- (Claim 1)** 1. A phase shift photomask, comprising:  
a transparent substrate;  
at least one isolated linear pattern on the substrate, including a transparent end portion with a phase shift of  $180^\circ$  relative to the substrate;  
a plurality of dense linear patterns on the substrate; and  
a transparent phase-shift region, located on the substrate adjacent to ends of the dense linear patterns and having a phase shift of  $90^\circ$  relative to the substrate.
- (Claim 2)** 2. The phase shift photomask of claim 1, wherein the substrate comprises quartz or glass.
- (Claim 3)** 3. The phase shift photomask of claim 1, wherein the dense linear patterns and the isolated linear pattern except its transparent end portion comprise opaque linear layers.
- (Claim 4)** 4. The phase shift photomask of claim 1, wherein the dense linear patterns and the isolated linear pattern except its transparent end portion comprise semi-transparent linear layers with a phase shift of  $180^\circ$  relative to the substrate.
- (Claim 5)** 5. The phase shift photomask of claim 1, wherein the transparent end portion of the isolated linear pattern and the transparent phase-shift region comprise recessed portions of the substrate.

**(Claim 6)** 6. The phase shift photomask of claim 1, including a pair of opposite isolated linear patterns with their transparent end portions facing each other.

**(Claim 7)** 7. The phase shift photomask of claim 1, wherein the dense linear patterns include two groups of dense linear patterns separated by the transparent phase-shift region, wherein the ends of the dense linear patterns in each group are adjacent to the transparent phase-shift region.

**(Claim 8)** 8. A phase shift photomask, comprising:  
a transparent substrate; and  
an isolated linear pattern on the substrate, including a transparent end portion with a phase shift of  $180^\circ$  relative to the substrate.

**(Claim 9)** 9. The phase shift photomask of claim 8, wherein the substrate comprises quartz or glass.

**(Claim 10)** 10. The phase shift photomask of claim 8, wherein the isolated linear pattern except its transparent end portion comprises an opaque linear layer.

**(Claim 11)** 11. The phase shift photomask of claim 8, wherein the isolated linear pattern except its transparent end portion comprises a semi-transparent linear layer with a phase shift of  $180^\circ$  relative to the substrate.

**(Claim 12)** 12. The phase shift photomask of claim 8, wherein the transparent end portion of the isolated linear pattern comprises a recessed portion of the substrate.

**(Claim 13)** 13. The phase shift photomask of claim 8, including a pair of opposite isolated linear patterns with their transparent end portions facing each other.

**(Claim 14)** 14. A phase shift photomask, comprising:  
a transparent substrate;  
a plurality of dense linear patterns on the substrate; and  
a transparent phase-shift region, located on the substrate adjacent to ends of the dense linear patterns and having a phase shift of  $90^\circ$  relative to the substrate.

**(Claim 15)** 15. The phase shift photomask of claim 14, wherein the substrate comprises quartz or glass.

**(Claim 16)** 16. The phase shift photomask of claim 14, wherein the dense linear patterns comprise opaque linear layers.

**(Claim 17)** 17. The phase shift photomask of claim 14, wherein the dense linear patterns comprise semi-transparent linear layers with a phase shift of  $180^\circ$  relative to the substrate.

**(Claim 18)** 18. The phase shift photomask of claim 14, wherein the transparent phase-shift region comprises a recessed portion of the substrate.

**(Claim 19)** 19. The phase shift photomask of claim 14, wherein the dense linear patterns include two groups of dense linear patterns separated by the transparent phase-shift region, wherein the ends of the dense linear patterns in each group are adjacent to the transparent phase-shift region.

